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E-mail: bmrceinfra@gmail.com

Date: 30/06/2020

Report No: BI/TR/2020-21/65

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 01 and 02.
Sample receipt date	02/06/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	30/05/2020
Location	Drain Raft in Ward 02
Date of Testing	28/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	28	M 10	22500	340	15.11
2	28	M 10	22500	362	16.09
3	28	M 10	22500	380	16.89

Note:

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Date: 18/06/2020

Report No: BI/TR/2020-21/70

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 01 and 02.
Sample receipt date	24/05/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	18/05/2020
Location	Drain Raft and Wall in Ward 01
Date of Testing	16/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	28	M 20	22500	545	24.22
2	28	M 20	22500	571	25.38
3	28	M 20	22500	592	26.31

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Date: 02/06/2020

Report No: BI/TR/2020-21/79

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Sample receipt date	26/05/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	24/05/2020
Location	Drain Raft in Ward 02
Date of Testing	01/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	7	M 20	22500	432	19.20
2	7	M 20	22500	451	20.04
3	7	M 20	22500	421	18.71

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Date: 30/05/2020 **Report No: BI/TR/2020-21/81**

TEST REPORT ON MANUFACTURED SAND SAMPLE FOR

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	26/05/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963), IS 383 - 2016
Date of Testing	28/05/2020

Grain Size Distribution of M Sand					
Sl. No.	**Sieve Size as per IS: 383 - 2016**	**% Passing**	**Standard Gradation as per IS 383- 2016 for**		
			Zone I	**Zone II**	**Zone III**
1	10.0 mm	**100.00%**	100	100	100
2	4.75 mm	**98.56%**	90 - 100	90 - 100	90 - 100
3	2.36 mm	**85.24%**	60 - 95	75 - 100	85 - 100
4	1.18 mm	**78.58%**	30 - 70	55 - 90	75 - 100
5	600 µ	**51.36%**	15 - 34	35 - 59	60 - 79
6	300 µ	**28.45%**	5 - 20	8 - 30	12 - 40
7	150 µ	**7.56%**	0 - 10	0 - 10	0 - 10
The M Sand fulfill the requirement of Gradation of Zone II as per IS 383-2016.					

Sl. No.	Description	Result
1	Bulk Density of Sand, g/cc Loose Compacted	 1.61 1.86
2	Specific Gravity of Sand	2.58

Note:

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Date: 30/05/2020 **Report No: BI/TR/2020-21/83**

TEST REPORT ON CEMENT SAMPLE FOR M 20 CONCRETE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	26/05/2020
Technical Reference	IS 4031 (Part 3), IS 4031 (Part 4), IS 4031 (Part 5)
Date of Testing	28/05/2020
Brand	Ultratech
Grade	53

Sl. No.	Description	Result	Permissible Limits as per IS: 8112 - 1987
1	Specific Gravity of Cement	3.10	-
2	Consistency Limit of Cement, %	34.00	-
3	Initial Setting Time of Cement, mins	110	Minimum 30 minutes
4	Final Setting Time of Cement, mins	210	Maximum 600 minutes
5	Soundness of Cement, mm	4	Maximum 10 mm
6	7 days Compressive Strength, N/mm^2	37.14	Minimum 33 N/mm^2
7	28 days Compressive Strength,N/mm^2	54.56	Minimum 53 N/mm^2

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Date: 11/06/2020 Report No: BI/TR/2020-21/84

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample receipt date	06/06/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	01/06/2020
Location	Drain Raft in Ward 02
Date of Testing	08/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	7	M 20	22500	426	18.93
2	7	M 20	22500	398	17.69
3	7	M 20	22500	469	20.84

Note:

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Date: 01/06/2020 **Report No: BI/TR/2020-21/87**

TEST REPORT ON COARSE AGGREGATE SAMPLE FOR M 20 CONCRETE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	28/05/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963, 1963 IS 2386(Part-4):1963, IS 383 - 2016
Date of Testing	30/05/2020

Gradation of 20 mm down size Aggregates				
Sl.No.	**Sieve Size,**	**% Passing**	**Standard Gradation as perIS:383- 2016 for**	
			Graded Size	**Single Size**
1	40 mm	**100.00%**	**100**	**100**
2	20 mm	**98.65%**	**95 - 100**	**85 - 100**
3	10 mm	**2.25%**	**25 - 55**	**0 - 20**
4	4.75 mm	**0.13%**	**0 - 10**	**0 - 5**

Gradation of 12.5 mm down size Aggregates				
Sl.No.	**Sieve Size,**	**% Passing**	**Standard Gradation as perIS:383- 2016 for**	
			Graded Size	**Single Size**
1	20 mm	**100.00%**	**100**	**100**
2	12.5 mm	**97.25%**	**90 - 100**	**85 - 100**
3	10 mm	**2.25%**	**40 - 85**	**0 - 45**
4	4.75 mm	**1.23 %**	**0 - 10**	**0 - 10**

Other Test Results		
Sl. No	**Description**	**Result**
1	Specific Gravity	2.66
2	Water Absorption of Aggregate	0.45%
3	Flakiness Index of Aggregate	9.98%
4	Elongation Index of Aggregate	17.85%
5	Aggregate Impact Value	21.87%

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Date: 30/06/2020 Report No: BI/TR/2020-21/90

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample receipt date	04/06/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	02/06/2020
Location	Drain Raft and Wall in Ward 02
Date of Testing	30/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	28	M 20	22500	563	25.02
2	28	M 20	22500	548	24.36
3	28	M 20	22500	559	24.84

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Date: 06/06/2020 **Report No: BI/TR/2020-21/92**

TEST REPORT ON COARSE AGGREGATE SAMPLE FOR M 20 CONCRETE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	08/06/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963, 1963 IS 2386(Part-4):1963, IS 383 - 2016
Date of Testing	10/06/2020

Gradation of 20 mm down size Aggregates				
Sl.No.	**Sieve Size,**	**% Passing**	**Standard Gradation as perIS:383- 2016 for**	
			Graded Size	**Single Size**
1	40 mm	**100.00%**	**100**	**100**
2	20 mm	**88.27%**	**95 - 100**	**85 - 100**
3	10 mm	**2.46%**	**25 - 55**	**0 - 20**
4	4.75 mm	**0.89%**	**0 - 10**	**0 - 5**

Gradation of 12.5 mm down size Aggregates				
Sl.No.	**Sieve Size,**	**% Passing**	**Standard Gradation as perIS:383- 2016 for**	
			Graded Size	**Single Size**
1	20 mm	**100.00%**	**100**	**100**
2	12.5 mm	**90.06%**	**90 - 100**	**85 - 100**
3	10 mm	**2.23%**	**40 - 85**	**0 - 45**
4	4.75 mm	**1.07%**	**0 - 10**	**0 - 10**

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Other Test Results		
Sl. No	**Description**	**Result**
1	Specific Gravity	2.66
2	Water Absorption of Aggregate	0.45%
3	Flakiness Index of Aggregate	11.20%
4	Elongation Index of Aggregate	16.89%
5	Aggregate Impact Value	20.16%

Note:

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Date: 15/06/2020 Report No: BI/TR/2020-21/94

TEST REPORT ON CONCRETE CUBE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample receipt date	12/06/2020
Technical Reference	IS 516 – 1959 (RA 2008)
Casting Date	06/06/2020
Location	Drain Raft in Ward 02
Date of Testing	13/06/2020

Sample No	Age of Cube, Days	Grade of Concrete	Cross Sectional Area, mm^2	Failure Load (KN)	Compressive Strength (N/mm^2)
1	7	M 20	22500	431	19.16
2	7	M 20	22500	412	18.31
3	7	M 20	22500	408	18.13

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Date: 12/06/2020 **Report No: BI/TR/2020-21/96**

TEST REPORT ON MANUFACTURED SAND SAMPLE FOR

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	08/06/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963), IS 383 - 2016
Date of Testing	10/06/2020

Grain Size Distribution of M Sand					
Sl. No.	**Sieve Size as per IS: 383 - 2016**	**% Passing**	**Standard Gradation as per IS 383- 2016 for**		
			Zone I	**Zone II**	**Zone III**
1	10.0 mm	**100.00%**	100	100	100
2	4.75 mm	**100.00%**	90 - 100	90 - 100	90 - 100
3	2.36 mm	**78.30%**	60 - 95	75 - 100	85 - 100
4	1.18 mm	**62.35%**	30 - 70	55 - 90	75 - 100
5	600 µ	**50.14%**	15 - 34	35 - 59	60 - 79
6	300 µ	**22.14%**	5 - 20	8 - 30	12 - 40
7	150 µ	**5.54%**	0 - 10	0 - 10	0 - 10
The M Sand fulfill the requirement of Gradation of Zone II as per IS 383-2016.					

Sl. No.	Description	Result
1	Bulk Density of Sand, g/cc Loose Compacted	 1.64 1.87
2	Specific Gravity of Sand	2.58

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Date: 30/05/2020

Report No: BI/TR/2020-21/TMT/01

TEST REPORT ON TMT STEEL – 10MM DIA

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample receipt date	24/05/2020
Technical Reference	IS 1786
Location	RCC Drain Reinforcement
Date of Testing	26/05/2020

SL No	Details	Test Results	Min Req. as per IS 1786-2008
01	Observed diameter of bar	**10.0 mm**	10.0 mm
02	Observed Wt/m Length **Kg/m**	**0.619**	0.567

Note:

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Date: 30/05/2020

Report No: BI/TR/2020-21/TMT/04

TEST REPORT ON TMT STEEL – 12MM DIA

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample receipt date	24/05/2020
Technical Reference	IS 1786
Location	RCC Drain Reinforcement
Date of Testing	26/05/2020

SL No	Details	Test Results	Min Req. as per IS 1786-2008
01	Observed diameter of bar	**12.0 mm**	12.0 mm
02	Observed Wt/m Length **Kg/m**	**0.894**	0.834

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Date:09/06/2020 **Report No: BI/TR/2020-21/GSB/07**

TEST REPORT ON GRANULAR SUBBASE SAMPLE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	08/06/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963), IS 383 - 2016
Date of Testing	08/06/2020

Gradation of Granular Subbase Grade V			
Sl. No.	**Sieve Size**	**% Passing**	**Standard Gradation as per MoRT&H V Revision**
			Gr V
1	75.0 mm	**100.00%**	100
2	53.0 mm	**88.78%**	80 - 100
3	26.5 mm	**57.96%**	55 - 90
4	9.5 mm	**60.25%**	35 - 65
5	4.75 mm	**40.87%**	25 - 50
6	2.36 mm	**13.33%**	10 - 20
7	0.85 mm	**5.20%**	2 - 10
8	0.425 mm	**2.33%**	0 - 5
The GSB Sample fulfills the requirement of Gradation of Grade V as per MoRT&H V Revision - 2013			

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Date:10/06/2020

Report No: BI/TR/2020-21/GSB/08

TEST REPORT ON GRANULAR SUBBASE SAMPLE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	09/06/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963), IS 383 - 2016
Date of Testing	09/06/2020

Gradation of Granular Subbase Grade V			
Sl. No.	**Sieve Size**	**% Passing**	**Standard Gradation as per MoRT&H V Revision**
			Gr V
1	75.0 mm	**100.00%**	100
2	53.0 mm	**100.00%**	80 - 100
3	26.5 mm	**81.25%**	55 - 90
4	9.5 mm	**57.89%**	35 - 65
5	4.75 mm	**47.02%**	25 - 50
6	2.36 mm	**13.33%**	10 - 20
7	0.85 mm	**6.68%**	2 - 10
8	0.425 mm	**3.89%**	0 - 5
The GSB Sample fulfills the requirement of Gradation of Grade V as per MoRT&H V Revision - 2013			

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Date:20/06/2020 **Report No: BI/TR/2020-21/WMM/10**

TEST REPORT ON WET MIX MACADAM SAMPLE

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02.
Sample received on	19/06/2020
Technical Reference	IS 2386(Part-1):1963 IS 2386(Part-3):1963), IS 383 - 2016
Date of Testing	19/06/2020

Gradation of Wet Mix Macadam

Sl. No.	Sieve Size	% Passing	Standard Gradation as per MoRT&H V Revision
1	53.0 mm	**100.00%**	100
2	45.0 mm	**98.97%**	95 - 100
3	22.4 mm	**70.00%**	60 - 80
4	11.2 mm	**53.68%**	40 - 60
5	4.75 mm	**34.98%**	25 - 40
6	2.36 mm	**28.01%**	15 - 30
7	0.60 mm	**14.57%**	8 - 22
8	0.075 mm	**2.57%**	0 - 5
The Wet Mix Macadam Sample fulfills the requirement of Gradation as per MoRT&H V Revision - 2013			

Note:

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Date: 28/06/2020 **Report No: BI/TR/2020-21/DBM/06**

TEST REPORT ON BINDER CONTENT FOR DBM Gr - II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	27/06/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	27/06/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	502	501	**4.57%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	702	701	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	678	677	
4	Weight of filter paper before extraction, W_3 (gm.)	12.1	12.1	
5	Weight of filter paper after extraction, W_4(gm.)	13.1	13.3	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/Wx100$	4.58	4.55	

Note:

1. The results relate only to the items tested.
2. Any corrections will invalidate this report.
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Date: 29/06/2020 **Report No: BI/TR/2020-21/DBM/07**

TEST REPORT ON BINDER CONTENT FOR DBM Gr - II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	28/06/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	28/06/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	502	503	**4.56%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	702	703	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	678	679	
4	Weight of filter paper before extraction, W_3 (gm.)	12.1	12.1	
5	Weight of filter paper after extraction, W_4(gm.)	13.1	13.3	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/W \times 100$	4.58	4.53	

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Date: 28/06/2020 **Report No: BI/TR/2020-21/DBM/12**

TEST REPORT ON BINDER CONTENT FOR DBM Gr - II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	27/06/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	27/06/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	502	501	**4.57%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	702	701	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	678	677	
4	Weight of filter paper before extraction, W_3 (gm.)	12.1	12.1	
5	Weight of filter paper after extraction, W_4(gm.)	13.1	13.3	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/Wx100$	4.58	4.55	

Note:

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Date: 07/07/2020 **Report No: BI/TR/2020-21/BC/05**

TEST REPORT ON BINDER CONTENT FOR BC – Gr II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	06/07/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	06/07/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	511	512	**5.44%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	711	712	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	683	683	
4	Weight of filter paper before extraction, W_3 (gm.)	12.2	11.9	
5	Weight of filter paper after extraction, W_4(gm.)	12.6	12.8	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/Wx100$	5.40	5.49	

Note:

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Date: 09/07/2020 **Report No: BI/TR/2020-21/BC/07**

TEST REPORT ON BINDER CONTENT FOR BC – Gr II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	08/07/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	08/07/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	509	507	**5.45%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	709	707	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	681	678	
4	Weight of filter paper before extraction, W_3 (gm.)	12.1	11.4	
5	Weight of filter paper after extraction, W_4(gm.)	12.4	12.6	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/W \times 100$	5.43	5.47	

Note:

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Date: 07/07/2020

Report No: BI/TR/2020-21/BC/10

TEST REPORT ON BINDER CONTENT FOR BC – Gr II

Name of Client	Executive Engineer, BBMP Yelahanka Division, Bangalore. .
Name of Agency	Sathya Construction
Project Name	Construction of CC drains and Development works in ward no 02
Date of Laying	06/07/2020
Technical Reference	IRC: SP-11 (ASTM 2172)
Date of Testing	06/07/2020

BINDER CONTENT				
Sl. No.	**DESCRIPTION**	**Trial 1**	**Trial 2**	**Average**
1	Weight of mix, W (gm.)	511	512	**5.44%**
2	Weight of sample (Bowl + Mix) before extraction, W_1 (gm.)	711	712	
3	Weight of sample (Bowl + Mix) after extraction, W_2 (gm.)	683	683	
4	Weight of filter paper before extraction, W_3 (gm.)	12.2	11.9	
5	Weight of filter paper after extraction, W_4(gm.)	12.6	12.8	
6	Bitumen content by wt. of mix % = $[(W_1 - W_2) - (W_4 - W_3)]/W \times 100$	5.40	5.49	

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